

THE STATUS OF *CALLIANASSA HARTMEYERI*
SCHMITT, 1935, WITH THE DESCRIPTION OF
CORALLIANASSA XUTHA FROM THE
WEST COAST OF AMERICA
(CRUSTACEA, DECAPODA, THALASSINIDEA)

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Abstract. — *Callianassa hartmeyeri* Schmitt, 1935, a species of uncertain identity, is redescribed. It proves to be a member of *Corallianassa* Manning, 1987. Specimens from the Eastern Pacific previously identified with *Callianassa hartmeyeri* or *Callianassa placida* De Man are described as a new species, *Corallianassa xutha*.

In 1924, Balss identified a callianassid from Kingston, Jamaica, with *Callianassa grandimana* (Gibbes, 1850) (as *Glypturus grandimanus*), a species then unknown since its original description. Balss' poor figures (Fig. 1) distinctly showed a species with a three-spined front, a large terminal cornea, and a major cheliped with ventral spines on the ischium and merus. Schmitt (1935:2, 3, 4), in his review of the North American callianassids, recognized that Balss's species differed from *C. grandimanus* in having ventral spines on the ischium and merus of the cheliped, and proposed the name *Callianassa hartmeyeri* for *Glypturus grandimanus* sensu Balss, 1924. *Callianassa hartmeyeri* has remained "incertae sedis" since Schmitt's account was published (see remarks in Biffar 1971:640–641, 649).

In 1938, Hult reported a specimen of *Callianassa hartmeyeri* from the Galapagos Islands, and in 1939 Schmitt reported additional material from Clipperton Island in the East Pacific. Chace (1962) studied material from Clipperton Island, identified it with *Callianassa placida* De Man, 1905, and synonymized *Glypturus grandimanus* sensu Balss, 1924, and *Callianassa hartmeyeri* Schmitt, 1935, with *C. placida*.

No additional material from the Ameri-

cas identified with either *C. hartmeyeri* or *C. placida* has been reported.

In 1987 I showed that *Callianassa grandimana* Gibbes, 1850, was conspecific with the species then known as *Callianassa bran-neri* (Rathbun, 1900), and that *Glypturus* Stimpson, 1866, was distinct enough from *Callianassa* Leach, 1814, sensu stricto, to be recognized as a distinct genus. I also recognized a new genus *Corallianassa* for *Callianassa longiventris* A. Milne Edwards, 1870, from the Caribbean, and *C. borradalei* (De Man, 1928), from the Indo-West Pacific, and noted (p. 388) that "The identity of *Callianassa hartmeyeri* Schmitt is still uncertain."

Collection of a pair of chelipeds of a *Corallianassa* at Lake Worth Inlet, Florida, in March 1987, prompted me to try to determine the identity of *Callianassa hartmeyeri* and to determine whether it was congeneric with or conspecific with *Corallianassa longiventris* (A. Milne Edwards, 1870). The chelipeds taken at Lake Worth Inlet proved to be those of *C. longiventris*.

Through the kindness of H.-E. Gruner, Zoological Museum, Berlin, I was able to examine the type of *Callianassa hartmeyeri*. It proves to be a species of *Corallianassa* distinct from *C. longiventris* and *C. borra-*

dalei, the two species originally assigned to *Corallianassa*, from the Eastern Pacific population previously identified with *P. hartmeyer*i, and from *C. placida*, a species herein transferred to *Corallianassa*, as well. Roy Oleröd, Swedish Museum of Natural History, Stockholm, allowed me to examine Hult's specimen of *Callianassa hartmeyer*i from the Galapagos Islands; it proved to belong to the new species described below.

All measurements are in millimeters (mm). Carapace length (cl) is the postorbital carapace length; total length (tl) is measured on the midline. Specimens have been deposited in the collection of the National Museum of Natural History, Smithsonian Institution, Washington (USNM), the Swedish Museum of Natural History, Stockholm (SMNH), and the Zoological Museum, Berlin (ZMB).

*Corallianassa hartmeyer*i (Schmitt, 1935)
Figs. 1, 2

Glypturus grandimanus.—Balss, 1924:179, figs. 3, 4.—Schmitt, 1935:4 [footnote].—Biffar, 1971:640.—Manning, 1987:399. [Not *Callianassa grandimana* Gibbes, 1850.]

*Callianassa hartmeyer*i Schmitt, 1935:3, 4; 1939:15.—Biffar, 1971:640, 641, 649, 651, 653.—Manning, 1987:388, 399.

Material.—Jamaica: Kingston [Kingston Harbor = 17°57'N, 76°47'W]; Küenthal and Hartmeyer leg., 1907, 1 ovigerous female (holotype, ZMB 20284).

Description.—Carapace trispinous, with long rostral spine overreaching base of cornea. Anterolateral spines strong, separated from front by non-calcified membrane. Dorsal oval 0.8 carapace length. Eyes extending to end of first segment of antennular peduncle, cornea large, terminal; eye with distinct ventromesial projection extending beyond cornea. Antennular and antennal peduncles incomplete; third maxilliped missing in holotype.

Major cheliped large, distance from prox-

imal end of merus to end of cheliped 1.6 times carapace length. Ischium lined ventrally with tubercles and spines increasing in size distally. Merus longer than high, ventral margin convex, armed with small spines and tubercles decreasing in size distally. Carpus shorter than merus, about half palm length, much higher than long, cristate dorsally and ventrally, inner side of ventral margin with few low serrations, appearing smooth in outer view, distal margin produced into spine. Palm longer than high, longer than dactylus, with distinct proximal crest dorsally, cristate ventrally. Dactylus stout, hooked, shorter than palm, cutting edge with 2 low, obtuse teeth in proximal third. Fixed finger indistinctly toothed, with proximal notch in opposable margin. Fingers crossing when closed.

Minor cheliped broken in type. Ischium spined ventrally, spines increasing in size distally. Merus longer than high, cristate dorsally and ventrally, with 4 low tubercles ventrally, only proximal (largest) visible in outer view. Carpus shorter than merus, slightly longer than high, cristate dorsally and ventrally, with ventrodiscal spine.

Second abdominal somite as long as sixth. Latter inflated, more than twice as long as telson. Telson trapezoidal, much shorter than uropods, lateral margins convergent posteriorly, posterior margin with rounded median projection.

Size.—Ovigerous female holotype, broken, cl 8 mm (tl, from Balss 1924, ca. 35 mm).

Remarks.—*Corallianassa hartmeyer*i can be distinguished immediately from the only other Western Atlantic species of the genus, *Corallianassa longiventris* A. Milne Edwards, 1870, in that the carpus of the major cheliped is about half as long as the palm, whereas in *C. longiventris* it is longer than half the palm. This was one of the characters used by Schmitt (1935:4) to differentiate *C. longiventris* and *C. hartmeyer*i in his key. As both Chace (1962:619) and Biffar (1971:649) pointed out, Schmitt inadvertently

transposed the names in the couplet of his key differentiating *C. hartmeyeri* and *C. longiventris*.

Corallianassa hartmeyeri differs from *C. longiventris* and resembles the species from the Eastern Pacific, named below, and differs from *C. placida* (De Man), as well, in having a ventrodiscal spine on the carpus of both first pereopods.

The type of *Corallianassa hartmeyeri* could be compared with more than a dozen specimens of *C. longiventris* from Caribbean localities in the collections of the National Museum of Natural History, as follows: Bermuda (1 male, USNM 122449), Lake Worth, Florida (2 chelipeds, USNM 205698), Jamaica (1 male, 1 female, USNM 70799), Barbados (1 female, USNM 68939), Antigua (1 male, USNM 122448), and Carrie Bow Cay, Belize (4 males, 1 ovigerous female, USNM 221700; 1 female and 2 chelipeds, USNM 221701; 2 females (1 ovigerous), USNM 205699; and 3 males, 1 female, USNM 205700). No specimen of the latter species was found to have the ventrodiscal spine on the carpus of the chelipeds, and in all specimens of *C. longiventris* at all sizes, the carpus of the major cheliped is longer than half the dorsal length of the palm.

The habitat of the type is unknown.

The color pattern, distinctive in *C. borradalei*, *C. longiventris*, and *C. xutha*, new species, is unknown in *C. hartmeyeri*.

Distribution.—Caribbean Sea, from Kingston, Jamaica. It is known only from the type locality.

Corallianassa xutha, new species

Fig. 3

Callianassa hartmeyeri.—Hult, 1938:7, figs. 1–4, pl. 1—Schmitt, 1939:15.

Callianassa (Callichirus) placida.—Chace, 1962:617. [Part, not reference to Edmondson (1944). Not *Callianassa placida* De Man, 1905].

Callianassa placida.—Hernández Aguilera et al., 1986:206.

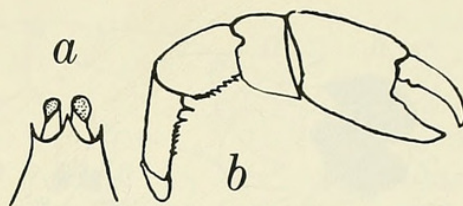


Fig. 1. *Corallianassa hartmeyeri* (Schmitt). Holotype. a, Anterior margin of carapace; b, Major cheliped. (From Balss, 1924.)

Material.—Mexico: María Madre Island, Baja California [21°35'N, 106°33'W], 4–10 fm (= 7–18 m), California Academy of Sciences, 1 female (USNM 142539).

Clipperton Island [10°18'N, 109°13'W]: Shore collecting on rocks to south of landing place, Presidential Cruise sta 9, W. L. Schmitt leg., 21 Jul 1938, 1 male (holotype, USNM 77861); same data, 1 ovigerous female (USNM 205906); Northeast side, low tide, reef flat, 0–1 ft (= to 18 cm), collected with Endrin, Limbaugh, Chess, and Hambly leg., 13 Sep 1958, 1 male (USNM 110974); East end, coral reef, Reese, Baldwin, and Wintersteen leg., sta W58-289, 15 Aug 1958, 1 ovigerous female (USNM 110978); South shore, coral reef, Reese, Baldwin, and Limbaugh leg., sta W58-295, 1 ovigerous female (USNM 110979).

Colombia: Port Utria [Ensenada Utria = 6°00'N, 77°21'W], mainland shore, first beach, intertidal, *Velero III* sta 418-35, 24 Jan 1935, 1 male (USNM 142538).

Galapagos Islands: Academy Bay [0°45'S, 90°17'W], Indefatigable Island, lagoon, in sand at low tide, Rolf Blomberg leg., 9 Aug 1934, 1 male (SMNH 13883).

All specimens other than the holotype are paratypes.

Description.—Carapace trispinous, with long rostral spine overreaching base of cornea. Anterolateral spines strong, separated from front by non-calcified membrane. Dorsal oval 0.8 carapace length. Eyes extending to end of first segment of antennular peduncle, cornea large, terminal; eye with distinct ventromesial projection extending beyond cornea. Antennal peduncle longer

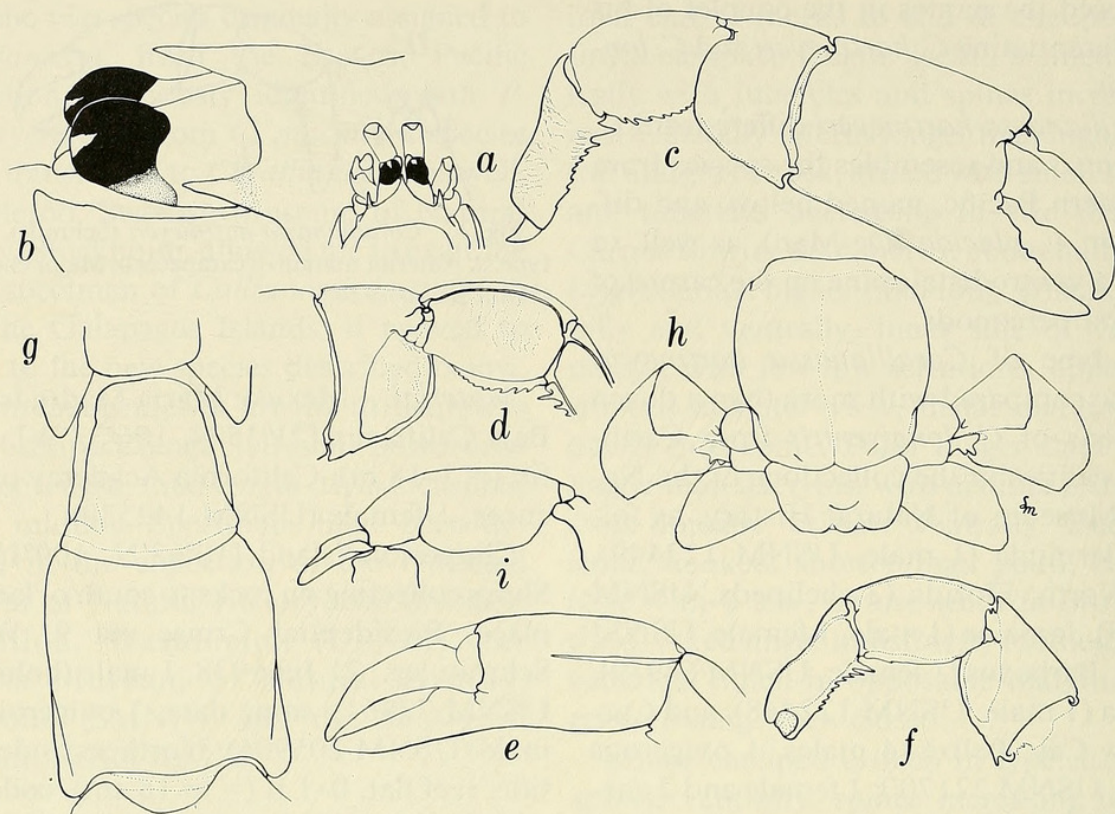


Fig. 2. *Corallianassa hartmeyeri* (Schmitt). Holotype. a, Front; b, Front, in oblique lateral view; c, Major cheliped; d, Inner face of merus and carpus of major cheliped; e, Major chela, dorsal view; f, Minor cheliped (broken); g, Second abdominal somite; h, Sixth abdominal somite, telson, and uropods; i, Sixth abdominal somite and telson, lateral view.

than antennular peduncle. Ischium and merus of third maxilliped not greatly expanded, ischium with spinous crest on inner surface, merus broader than long, dactylus simple, slender, slightly shorter and much narrower than propodus.

Major cheliped very large, distance from proximal edge of merus to end of chela more than twice carapace length. Ischium lined ventrally with tubercles and spines, increasing in size distally. Merus slightly longer than high, ventral margin semicircular, distinctly flared, with small spines and tubercles, decreasing in size distally. Carpus shorter than merus, more than half palm length, much higher than long, cristate dorsally and ventrally, inner side of ventral margin with a few large tubercles, distal margin produced into spine. Palm slightly longer than high, about as long as dactylus, with distinct proximal crest dorsally, cristate ventrally. Dactylus stout, hooked,

shorter than palm, cutting edge with 2 triangular teeth in proximal third, distal tooth more acute than proximal. Fixed finger indistinctly toothed, with proximal notch on opposable margin. Fingers crossing when closed.

Minor cheliped extending about to dactylus of major. Ischium spined ventrally, spines increasing in size distally. Merus longer than high, cristate dorsally and ventrally, unarmed ventrally. Carpus shorter than merus, slightly longer than high, cristate dorsally and ventrally, with ventrodistal spine. Propodus longer than high, longer than carpus, cristate ventrally, cristate on proximal half dorsally. Movable finger longer than palm, stout, with obtuse basal tooth. Fixed finger indistinctly toothed, fingers crossing when closed.

Second abdominal somite as long as sixth. Latter inflated, twice as long as telson. Telson trapezoidal, much shorter than uro-

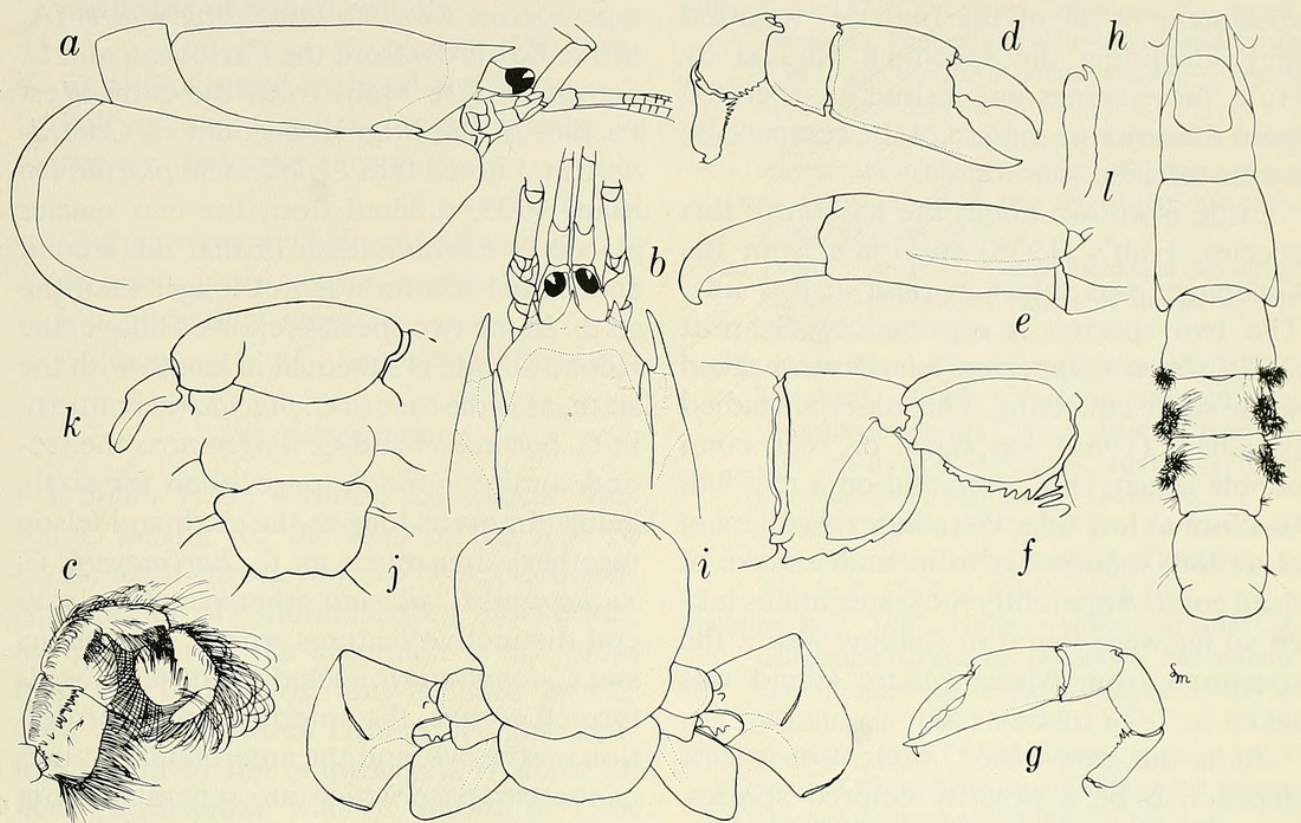


Fig. 3. *Corallianassa xutha*, new species (USNM 77861). a, Carapace, lateral view; b, Front, dorsal view; c, Third maxilliped; d, Major cheliped; e, Major chela, dorsal view; f, Merus and carpus of major cheliped, inner face; g, Minor cheliped; h, Abdomen; i, Sixth abdominal somite, telson, and uropods; j, Sixth abdominal somite, lateral view; k, Sixth abdominal somite and telson, lateral view; l, Endopod of first pleopod. a-g, i, Female; h, j, k, Male.

pods, lateral margins convergent posteriorly, posterior margin with indistinct rounded median prominence.

Size.—Males, cl 6.0 to 8.5 mm; non-ovigerous females cl 3.8 and 4.1 mm; ovigerous females cl 6.1 to 9.8 mm. Largest male, tl 48 mm; largest female, ovigerous, tl 55 mm. Hult's specimen, a male, is 37 mm long.

Name.—The specific name is from the Greek, xouthos, yellowish brown, alluding to the color of the chelipeds reported in this species.

Remarks.—This species is very similar to *C. hartmeyeri* in basic facies, agreeing with it and differing from all other species of *Corallianassa* in having a distinct distal spine on the ventral margin of the carpus of both first pereopods. The ventral border of the carpus is unarmed in *C. borradalei*, *C. longiventris*, and *C. placida*, the other species

now assigned to *Corallianassa*. *Corallianassa xutha* differs from *C. hartmeyeri* in several features: the carpus of the major cheliped is more than half as long as the palm, and is distinctly serrate, almost spined, on its inner, ventral margin (these serrations are scarcely or not at all visible in external view); in *C. hartmeyeri* the carpus is no more than half the length of the palm, and the ventral serrations on the carpus are scarcely distinguishable. The movable finger of the major chela is armed with an obtuse and an acute tooth, separated by a gap; in *C. hartmeyeri* the two teeth are obtuse and are adjacent. The merus of the minor cheliped is twice as long as high and unarmed below; in *C. hartmeyeri* it is less than twice as long as high, armed below with a single denticle.

Hult reported that the anterolateral spines of the carapace were not articulated in his

specimen; in all of the material reported here, including the specimen studied by Hult, these spines are distinctly separated from the anterior margin of the carapace by a non-calcified membrane.

Little is known about the habitat of this species. Hult's (1938) specimen from the Galapagos was taken in sand at low tide. The two specimens reported by Schmitt (1939) from Clipperton Island were taken while shore collecting. The material studied by Chace (1962) was taken on reef, coral cobble beach; coral reef; and on a reef flat, 0–1 foot at low tide. Hernández Aguilera et al. (1986) reported it from under rocks of dead coral. Apparently most specimens taken so far were found in shallow water; the specimen from María Madre Island was taken in 7–18 meters.

As is the case with *C. longiventris*, this appears to be a brightly colored species. Schmitt (1939:15) reported that "On the chelae of these specimens there were bright ochraceous to orange ochraceous (Ridgway) irregular color markings; both fingers toward their distal china-white tips were of this golden yellowish brown, the palm showed an irregular pattern of color and the upper surface of carpus and merus were likewise suffused with it, the color being more concentrated and stronger on the merus and on the carpus." Schmitt further commented that such a distinctive color pattern was unusual in the callianassids, and Manning (1987:397) suggested that the bright color patterns might be characteristic of the genus *Corallianassa*.

Distribution.—Eastern Pacific, from María Madre Island, Mexico; Bahía Azufre [18°21'N, 114°44'W], Isla Clarión, Mexico (Hernández Aguilera et al. 1986); Clipperton Island (Schmitt 1939, Chace 1962); Port Utria, Colombia; and Indefatigable Island, Galapagos Islands (Hult 1938).

Discussion

The genus *Corallianassa* Manning (1987: 393) was established for two species, the

type species *Corallianassa longiventris* (A. Milne Edwards) from the Caribbean and *C. borradalei* (De Man) from the Indo-West Pacific. In the original account of *Corallianassa*, I noted that *Callianassa placida* De Man, 1905, differed from the two species placed in *Corallianassa* in that the second abdominal somite was not longer than the sixth. In the two species reported above, the second somite is subequal in length with the sixth, as is the case in *C. placida* (in contrast, in *C. borradalei* and *C. longiventris* the second somite is much longer than the sixth, being almost as long as the sixth and telson together). Inasmuch as *C. hartmeyeri*, *C. xutha*, and *C. placida* otherwise share several distinctive features with *C. borradalei* and *C. longiventris*, including the large, well-formed cornea, the anterior ventral projection on the eye, and the anterolateral spines of the carapace which are separated from the carapace by a non-calcified membrane, all of these species are placed in *Corallianassa*.

Other characters that may prove to be diagnostic for the genus are the low, rounded median prominence on the posterior margin of the telson, and the inflated sixth abdominal somite.

Members of the genus can be distinguished by the following key:

1. Second abdominal somite longer than sixth, almost as long as sixth and telson combined 2
- Second abdominal somite subequal in length to sixth 3
2. Dorsal carina on palm of major cheliped extending over entire length of palm, ending in distinct flange ...
..... *C. borradalei* (De Man)
- Dorsal carina on palm short, not extending to distal end, not ending in distinct flange
... *C. longiventris* (A. Milne Edwards)
3. Ventral margin of carpus of both chelipeds terminating in spine ... 4
- Ventral margin of carpus of both

- chelipeds unarmed distally
..... *C. placida* (De Man)
4. Carpus of major cheliped more than
half as long as palm, inner ventral
margin distinctly serrate
..... *C. xutha*, n. sp.
- Carpus of major cheliped half as long
as palm, inner ventral margin with
low, indistinct tubercles
..... *C. hartmeyeri* (Schmitt)

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